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GEORGIA INSTITUTE OF TECHNOLOGY
OFFICE OF CONTRACT ADMINISTRATION
SPONSORED PROJECT INITIATION

Date: *June 22, 1976*

Project Title: *Instructional Scientific Equipment Program*

Project No: *E-26-514*

Project Director: *Dr. J. Narl Davidson*

Sponsor: *National Science Foundation*

Agreement Period: From *6/8/76* Until *5/31/78*

Type Agreement: *Grant No. SER76-13228*

Amount: *$20,000 NSF*
20,300 GIT (E-26-211)
$40,300 Total

Reports Required: *Final Report*
Fiscal Report

Sponsor Contact Person (s):

Technical Matters

Contractual Matters
(thru OCA)

Instructional Scientific Equipment Program
National Science Foundation
Washington, D. C. 20550

no letter

Defense Priority Rating:

Assigned to: *Nuclear Engineering* (School/Laboratory)

COPIES TO:

- Project Director
- Division Chief (EES)
- School/Laboratory Director
- Dean/Director—EES
- Accounting Office
- Procurement Office
- Security Coordinator (OCA) ✓
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- Library, Technical Reports Section
- Office of Computing Services
- Director, Physical Plant
- EES Information Office
- Project File (OCA)
- Project Code (GTRI)
- Other _____

GEORGIA INSTITUTE OF TECHNOLOGY
OFFICE OF CONTRACT ADMINISTRATION

SPONSORED PROJECT TERMINATION

Date: February 8, 1979

Project Title: Instructional Scientific Equipment Program

Project No: E-26-514

Project Director: Dr. J. Narl Davidson

Sponsor: National Science Foundation

Effective Termination Date: May 31, 1978

Clearance of Accounting Charges: May 31, 1978

Grant/Contract Closeout Actions Remaining:

_ Final Invoice and Closing Documents
x Final Fiscal ~~Report~~ Accounting (FCTR)
_ Final Report of Inventions
_ Govt. Property Inventory & Related Certificate
_ Classified Material Certificate
_ Other _____

Assigned to: Nuclear Engineering (School/Laboratory)

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Other _____

CA–4 (3/76)

E-26-514
FR

SCHOOL OF NUCLEAR ENGINEERING

Atlanta, Georgia 30332 (404) 894-3720

November 15, 1978

Mr. James L. Bostick
Grants Officer
National Science Foundation
Washington, D. C. 20550

Re: NSF Grant No. SER76-13228
Project Directors Final Report

Dear Mr. Bostick:

The project referenced above, a National Science Foundation Instructional Scientific Equipment Grant for Undergraduate Education, has been completed. The equipment specified in the grant proposal consisting of two calculator controlled, high resolution gamma spectrometry systems and two coincidence counting systems has been acquired and our students have been using this equipment for the past four quarters. The improvement in our laboratory program has been significant. We are now able to address many of the problems of low level counting and spectrometry that are common in the laboratory work associated with the nuclear power industry.

Initially there was some doubt that the use of highly automated equipment, such as the spectrometry systems, would best serve the development of a student's understanding of detection principles. However, we have discovered that the elimination of much of the drudgery of data reduction associated with the old equipment has greatly increased the students' modivation in the lab. They are learning not only detection principles at least as well as before, but they are developing a much better appreciation for the capabilities of the various detectors and their many applications.

The acquisition of the equipment allowed by this grant has also enhanced the educational value of other aspects of the detection laboratory. Several components, particularly the modern multichannel analyzers and the desktop calculators, have added a new dimension to experiments other than the gamma spectrometry and coincidence exercises. In fact, the calculators have become important for nearly every experiment we perform.

The implementation of this program has been free of any significant problems. The equipment was ordered in the first year of the grant period and it has been extensively used in the lab during the past year. The administration of the grant funds by NSF and the local projects office has been exemplary.

Respectfully yours,

J. Narl Davidson
Project Director

JND:jg

NSF Project SER76-13228
Project Director's Final Report

Equipment Substitutions and Additions

During the life of the grant, no significant modifications were made in the objectives or operation of the project as stated in the project proposal. The equipment acquired was the equipment listed in the proposal.

PLEASE READ INSTRUCTIONS ON REVERSE BEFORE COMPLETING

PART I–PROJECT IDENTIFICATION INFORMATION

1. Institution and Address	2. NSF Program	3. NSF Award Number
Georgia Institute of Technology School of Nuclear Engineering Atlanta, GA 30332	ISEP	SER76-13228
	4. Award Period From 6/8/76 To 5/31/78	**5. Cumulative Award Amount** $20,000 (matching funds)

6. Project Title

Instructional Scientific Equipment Program

PART II–SUMMARY OF COMPLETED PROJECT *(FOR PUBLIC USE)*

The School of Nuclear Engineering of the Georgia Institute of Technology has upgraded its undergraduate instruction in nuclear radiation detection by the acquisition of modern gamma spectrometry and coincidence counting equipment. The gamma spectrometry system consists of a solid state detector with associated bias supply and amplifier, a multichannel pulse height analyzer and a desk-top calculator for on-line data analysis. The coincidence counting system is a simple two branch coincidence set up for time discrimination and absolute activity measurements. The addition of this equipment allows nuclear engineering students to receive some practical experience with modern detection equipment.

PART III–TECHNICAL INFORMATION *(FOR PROGRAM MANAGEMENT USES)*

1. ITEM *(Check appropriate blocks)*	NONE	ATTACHED	PREVIOUSLY FURNISHED	TO BE FURNISHED SEPARATELY TO PROGRAM	
				Check (√)	Approx. Date
a. Abstracts of Theses	X				
b. Publication Citations	X				
c. Data on Scientific Collaborators	X				
d. Information on Inventions	X				
e. Technical Description of Project and Results					
f. Other *(specify)*					

2. Principal Investigator/Project Director Name *(Typed)*	3. Principal Investigator/Project Director Signature	4. Date
J. Narl Davidson		11/15/78

NSF Form 98A (5-78) Supersedes All Previous Editions

Form Approved OMB No. 99R0013